

# **DRAFT**

## **Concept for the CALFED Bay-Delta Program Comprehensive Monitoring, Assessment, and Research Plan**

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### **Purpose**

CALFED actions to restore ecological health, secure the integrity of Delta islands, and provide good water quality for all beneficial uses are based on scientific determination. There is a need to:

- validate the existence and quantify the severity of problems affecting the Bay-Delta estuary.
- validate baseline conditions against which the effects of CALFED actions will be assessed.
- evaluate the results of pilot-level implementations of CALFED actions (including Category III actions).
- evaluate the progress of full scale implementations of CALFED actions (including Category III actions).
- comprehensively assess the overall effectiveness of CALFED actions (including Category III actions).
- provide input for the adaptive management process whereby CALFED actions are evaluated and changed as needed to be most effective.

These requirements will be met only through implementation of a comprehensive program of monitoring, assessment and research. This document describes key program concepts to meet the above needs:

### **Principles**

CALFED will develop a robust management structure that will fix responsibility and accountability, and assure the continuity of plan elements and attainment of plan objectives. Also, an implementation plan will be developed that defines what, where, and when, and what type of measurements are to be made, how the information is to be evaluated, and how it will be used to most effectively contribute to decision making with a solid scientific foundation.

The following principles will be applied:

- The CMARP will be implemented primarily through the efforts of others, and building on existing programs where feasible. Entities participating in the implementation of the CMARP and receiving resources from CALFED will be held responsible for the quality, quantity, and timeliness of products. The contributions of CMARP participants will be reviewed annually by CALFED to verify that performance meets the standards set by the CALFED Policy Group.
- The emphasis of the CMARP is not on data collection, but on data evaluation and use.

Evaluative reports, rather than data reports, will be published. Each scientific report published by or for CALFED will have a section evaluating the assessment system and making recommendations for improving the usefulness of the information and achieving greater economy in the assessment activity.

- The CMARP will be fully coordinated with similar assessment activities of other local, regional, state, and federal agencies. To the maximum practical extent, duplication of effort will be avoided.
- The CMARP will be directed to encouraging standardization of sampling equipment, analytical methodology, reporting limits, quality assurance/quality control, and electronic data formats to enable sharing of data among agencies.

#### **Levees and Channels Component**

The types of monitoring, assessment and research activities that will be required for the levee and channels actions include, but are not limited to:

- seismic stability studies
- assessment of soils and sediments for the presence of salts and toxicants
- engineering evaluations of levee construction materials
- experiments to control and reverse island subsidence

#### **Ecosystem Restoration Component**

The types of monitoring, assessment and research activities that will be required for the ecosystem restoration actions include, but are not limited to:

- evaluation of food web dynamics in the estuary
- identification of rare and endangered species
- assessments of the recovery of habitats and species dependent on habitats
- research into critical life stages, population dynamics, and habitat use of Delta species
- identification, effects, and means of controlling exotic species introductions to the Delta estuary

#### **Water Quality Component**

The types of monitoring, assessment and research activities that will be required for water quality actions include, but are not limited to:

- comprehensive water quality monitoring and assessment to assess water quality conditions and evaluate effects of CALFED actions
- research into treating agricultural drainage
- investigation of potential measures to prevent or reduce harmful agents in storm water runoff.
- research into means of controlling and reducing acid mine drainage
- research into means of reducing harmful materials in agricultural drainage.
- evaluating toxicity and its sources in the Delta and its tributaries.

#### **Water Use Efficiency Component**

The types of monitoring, assessment and research activities that will be required for water use

efficiency actions include, but are not limited to:

- research into real time monitoring of agricultural irrigation practices and other potential means of increasing agricultural use efficiency.
- research into means of improving urban water use efficiency

#### **Storage and Conveyance Component**

The types of monitoring, assessment and research activities that will be required for storage and conveyance options include, but are not limited to:

- development of mathematical modeling tools

#### **Implementation of the CMARP**

The CMARP will be implemented beginning with approval of Category III projects for which funding is currently available, and extending through Phase III, the Implementation Phase of the CALFED Program.

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